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CORPORATION

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NEWS

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NEW SOFTWARE TURNS COMMODORE 64 INTO A MUSIC SYNTHESIZER FOR HOME AND STAGE

BERKELEY, Calif. -- A software package designed to transform the Commodore 64 home computer into a musical instrument that anyone from an inexperienced child to a professional musician can play has been introduced by Waveform Corporation.

Called MusiCalc 1 Synthesizer and Sequencer, the program allows users to play along with pre-programmed melodies, or create and store their own melodies for later playback. Users can compose and perform in styles ranging from classical to new wave to Japanese to Latin and African,

said Waveform president Thomas A. McCreery.

"MusiCalc 1 represents what could be the first software program that eliminates the prerequisite training one must go through before enjoying the creative experience of playing and composing music. Yet due to its sophisticated capabilities, MusiCalc 1 also functions on a level suitable to professional recording artists. In fact, many respected musicians have expressed enthusiasm for the product," said McCreery.

The program turns the Commodore 64 into a professional-caliber, three-voice synthesizer with fully interactive real-time sequencing, slide controls, modulators and transposers. Users can hear their creations by attaching their microcomputer to a television set, stereo system or professional-grade amplifier, using standard RCA patch cords.

MusiCalc 1 features applications for $600 that previously fell within the prohibitive price range of $3,000 to $15,000. And the $600 figure includes the cost of the Commodore 64 and disk drive. The suggested retail price of the Musicalc 1 software alone is ~~$74.95~~. 49.95

MusiCalc 1 is the first member of an interactive software product family which Waveform will introduce over the next several months. Other products include a

scorewriter and keyboard.

Waveform chose the Commodore 64 for its first product for two reasons, said McCreery. First, the Commodore 64 contains a Sound Interface Device (TM) chip, or SID chip, which has a more enhanced sound capability than those in other computers. Second, the Commodore 64 is among the best-selling, low-end home computers, with a huge installed base.

Companion disks, called Templates, will be available to extend MusiCalc by offering over 1,000 additional combinations of melodies and sounds per disk.

According to McCreery, MusiCalc will be avalable through computer software stores, computer specialty stores, mass merchandisers, book stores and musical instrument stores.

Waveform was founded in 1983 with seed financing supplied by Dr. Peter McCuen, former president of Verbatim Corp.

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Commodore is a registered trademark of Commodore International, Ltd.

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For immediate scoring of compositions

NEW SOFTWARE LETS NOVICES AND PROS SEE THEIR MUSICAL COMPOSITIONS IN STANDARD NOTATION ON COMMODORE 64

BERKELEY, Calif. -- A software package which shows MusiCalc 1 users how their improvisations and creations would look in standard musical notation, complete with bass and treble clefs, staffs, sharps, flats and incidentals, is available from Waveform Corp.

According to the company, MusiCalc 2 ScoreWriter lets users see notation on any screen compatible with the Commodore 64, and also obtain easy-to-read printouts using any of several graphics printers recommended by the Berkeley-based firm.

The product translates score sequences created on MusiCalc 1 into standard music notation that appears on the

screen in either one, two or three voices at a time, depending on the user's preference. ScoreWriter lets users link MusiCalc 1 sequences together, allowing compositions to contain over 7000 notes.

According to Waveform president Thomas A. McCreery, users can receive easy-to-read printouts of their creations by installing a compatible Epson printer with the Graftrax option, or a Commodore VIC-1525 graphics printer.

MusiCalc 2 ScoreWriter works in conjunction with the MusiCalc 1 Synthesizer and Sequencer, a software package that effectively turns the Commodore 64 into a musical instrument that anyone from an inexperienced child to a professional musician can play. MusiCalc 1 transforms the Commodore 64 into a professional caliber, three-voice synthesizer with fully interactive real-time sequencing, slider controls, modulators and transposers. Users can hear their creations by attaching the Commodore 64 to a television set, stereo system, or professional-grade amplifier.

The ScoreWriter package also includes SyncLink, which McCreery described as "a bonus program which allows the MusiCalc system to work in sync with up to eight digital effects devices, including popular drum machines such as Drumulator, Drumatix and Dr. Rhythm. With SyncLink, you can

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Companion to MusiCalc 1

MUSICALC 3 SOFTWARE LETS AMATEUR AND PROFESSIONAL MUSICIANS COMPOSE IN ANY SCALE ON COMMODORE 64 KEYBOARD

BERKELEY, Calif. -- A new software package that transforms the Commodore 64 QWERTY keyboard into a musical keyboard that can be played in any desired scale or melodic sequence has been introduced by Waveform Corp.

The new program, called MusiCalc 3 Keyboard Maker, can be used with or without the previously-announced MusiCalc 1 Sequencer and Synthesizer. MusiCalc 3 can have the same effect on the QWERTY keyboard as a capo has on a guitar. It allows the user to play in different keys without changing finger positions.

There are seven modes available in MusiCalc 3. Among these, the visual editing mode lets users arrange the musical notes on the Commodore 64 keyboard in any sequence they choose. The transposition mode allows scales to be

transposed to different musical keys. The scratchpad mode permits the combination of different scales for playing musical progressions. And with the file mode, any keyboard layout the user constructs can be stored on disk for later use. Note sequences are available in real time during editing. A built-in arpeggiator lets users play whole scale arpeggios on a single keyboard key.

MusiCalc 3 Keyboard Maker can work as a stand-alone product or, for better effect, in conjunction with Waveform's MusiCalc 1 Synthesizer and Sequencer. MusiCalc 1 is a software package that turns the Commodore 64 home computer into a musical instrument that anyone from an inexperienced child to a professional musician can play. It transforms the Commodore 64 into a professional caliber, three-voice synthesizer with fully interactive real-time sequencing, slider controls, modulators and transposers. Users can hear their creations by attaching the Commodore 64 to a television set, stereo system, or professional grade amplifier.

Although MusiCalc 3 can function alone, it is most useful as a compositional aide and educational tool when used in conjunction with MusiCalc 1. MusiCalc 1 is the instrument, and MusiCalc 3 is the keyboard for that instrument.

"MusiCalc 3 literally turns the Commodore 64

require any prior experience or understanding of standard music notation or music theory. The MusiCalc 3 package contains a simple diagram that shows non-musicians how to convert sheet music into numbers and notes."

McCreery added that all documentation is contained within the program and is accessible through the Help key. Detailed explanations appear in paragraph form.

Users can obtain printouts of all compositions created with MusiCalc 3 by using the MusiCalc 2 ScoreWriter, a companion software program which translates score sequences into standard music notation that appears on the screen in either one, two or three simultaneous voices, depending on the user's preference. Hard copy printouts require either a compatible Epson printer with the Graftrax option, or a VIC-1525 graphics printer.

According to McCreery, MusiCalc 3 Keyboard Maker will be available through computer software and specialty stores, mass merchandisers and musical instrument stores. The price is $34.95.

Waveform was founded in 1983 with seed financing supplied by Dr. Peter McCuen, former president of Verbatim Corp.

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WAVEFORM CORP.
EDITORIAL BACKGROUNDER

Imagine being able to play a musical instrument the first time you pick one up, without ever previously playing, performing or reading a single note of music.

Imagine an instrument so simple a novice can enjoy it the very first time; yet so sophisticated a professional can perform with it.

Imagine the instrument is a popular microcomputer, and the cost of the software is less than ~~$75~~. 50

Imagine playing the instrument without any familiarity with microcomputers. This is the musical world that Waveform is creating.

Thomas A. McCreery Jr., Waveform's president and chief financial officer, met William Moulton, the company's board chairman and technical director, through the offices of a Big Eight accounting firm where McCreery had once worked. Moulton was a co-founder of Ultimate Media Enterprises (UME), a Santa Cruz-based research and development think tank involved in applying microelectronics technology to musical instruments, games, artificial intelligence and the arts. Between them, Moulton and McCreery formed Waveform Corp. of Berkeley, Calif.

They were aware of a previously undefined and unattended niche within the software industry: the void in the range of available software which existed between the simple fun of video games, and the utilitarian applications of productivity tools.

McCreery and Moulton felt that the power of the microcomputer had other uses besides playing games and performing work-related tasks.

PLAY NOW, LEARN LATER

What Waveform is marketing is among the first--if not the very first -- of a new genre of software that, through music, allows untrained, inexperienced people to create an aesthetic experience with a microcomputer. Yet the software is so sophisticated it serves as a tool for the amateur as well as the working musician. For the first time, software will allow novices to feel the sensation of creating and producing something on a level at least roughly equivalent to art. Software will make playing music as easy as operating a household appliance and as satisfying as performing on a conventional instrument.

In a sense, Waveform has put the genie in the bottle, waiting for the user to let him out.

The company's first product offering is MusiCalc, a family of interrelated products that turns the Commodore 64 into a synthesizer with three-voice capability. It lets anyone from a child to a professional musician play along with songs, develop instrumental sounds, and record music for playback. Users can play rhythms, melodies and bass lines in styles of music as diverse as New Wave, African and Latin. Different styles of music are available on Templates, companion disks which contain over 1,000

combinations of sounds and melodies per disk. The Templates, with their pre-set scores of music, are the key to beginners learning fast.

Users need only type in one line of code to begin playing MusiCalc.

Waveform is making capabilities available at home-user prices that were previously available on only the most expensive machines. Yet the software is useful to professionals as a compositional and performance tool because of its real time sequencing, which allows the user to change parameters in real time, interface with other equipment and save sounds for later use. With an optional printer, MusiCalc 2, a separate product, can provide printouts of compositions in standard musical notation. Applications required by professional musicians which cost between $3,000 and $15,000 will be available from Waveform for under $600, and this figure includes the cost of the Commodore 64 microcomputer and disk drive, along with the software.

Users can hear their sounds by connecting the microcomputer system with a television, stereo system or musical instrument amplifier with patch cords containing standard RCA plugs.

Waveform chose the Commodore for its first

product for two reasons. First, the Commodore 64 contains a sound interface device (SID) chip, which has a more enhanced sound capability than those in other personal computers. Secondly, the Commodore 64 is generally thought to be among the best-selling, low-end home computers and has a huge installed base.

Waveform's products represent what might be the first software that eliminates the prerequisite learning curve which one must go through before enjoying the aesthetic experience of playing and composing music. The company's programmers provide users with the needed technical capabilities. On the other hand, due to its great capabilities, MusiCalc also functions on a level suitable to professional recording artists. Many respected musicians have expressed a great deal of interest in MusiCalc.

Each Waveform product has this inherent combination of appeals. An individual who purchases MusiCalc for entertainment purposes may become so skilled that he or she may eventually use MusiCalc as a performing tool. Conversely, a professional musician who buys MusiCalc for productivity purposes may use it for instructional or educational purposes, whether teaching a student or familiarizing oneself with computer technology.

## A CUSTOMER BASE OF EVERYONE

Waveform's potential customers range from anyone who ever had a desire to play but can't read music, to accomplished musicians. Those people who don't own Commodore 64s but want to play music will find MusiCalc's software capabilities so attractive that they could conceivably purchase the microcomputer for this single application: a professional musical instrument for under $600.

Up to now, users of microcomputers have primarily been upper-middle class professionals who use them for work-related productivity, or kids who use them for games. But MusiCalc's universal appeal could make microcomputers more attractive to many other demographic segments beyond the traditional markets.

To illustrate the impact of this point, software like MusiCalc, which allows an aesthetic experience, could lead to a broadening of the microcomputer market. According to surveys, most microcomputer purchasers are men, while 70 percent of all piano players in the United States are women. There are many other groups which never thought of a microcomputer as a means of creative expression, inexpensive enough for nearly universal ownership.

## PRODUCTS

The company intends to reach its prospective customers with a variety of interrelated products designed to be used in conjunction with one another.

MusiCalc 1 Sequencer and Synthesizer is a professional caliber three-voice synthesizer with slider controls, modulators, transposers and a fully interactive, real-time step sequencer. This allows the user to make and hear changes instantly.

MusiCalc 2 ScoreWriter works with MusiCalc 1 to print out compositions in standard music notation, using an optional printer. Users can play tunes on the MusiCalc 1, activate MusiCalc 2 and have a graphic readout in standard music of what they played.

The MusiCalc 3 Keyboard Maker lets users base the interval structure of the keyboard on any desired scale.

The Colortone keyboard, and MusiCalc 4 software represent a new approach to keyboards, being of professional quality, yet easy to play. The keyboard comes with an interface that allows it to work with MusiCalc 1, and enables the user to play music and automatically record it to disk to play back or print out later. MusiCalc 4

allows the user to play any scale in any key for more versatility. This keybord helps novice users to learn music quickly while providing excellent value to the professional.

MusiCalc also offers the standardized musical instrument digital interface (MIDI), a hardware cartridge which allows the professional musician to use MusiCalc in conjunction with other synthesizers (such as Rowland and Moog) in recording and live performance settings. The MIDI interface also lets users connect an addition Commodore for 6-voice capabiliity.

MusiCalc is packaged in record album format, the new standard of software packaging. Art on the actual disks, an industry first, portrays images and scenes reflecting the style of music contained on the disk.

## DIVERSE DISTRIBUTION

Waveform will market its products through a variety of retail outlets. The company will use manufacturer's representatives and distributors to place products in retail outlets, including computer and software specialty stores, mass merchandisers, book stores, and musical instrument stores. Marketing software through music stores will be an industry first.

WAVEFORM CORP.

Seed financing for Waveform Corp. was supplied by Dr. Peter McCuen, founder of Acurex and later CEO of Verbatim. When McCuen joined Verbatim as president in 1973, it was an unprofitable, four-year-old company with sales of $1.8 million. Under his direction, Verbatim became the world's leading mini-magnetic media company, with a 35 percent market share in flexible disks and a 50 percent market share in digital cassettes. In 1980, McCuen's final year as president, Verbatim enjoyed sales of $55 million.

McCuen left Verbatim to co-found McCuen & Steele, a private firm engaged in real estate development and investment.

Waveform's first round of financing came from private investors. The company is now seeking its second round of financing.

Waveform expects to reach a sales volume of $25 million by the end of fiscal 1985 and $85 million by the end of fiscal 1988.

## Waveform Officers

Mr. Thomas A. McCreery, Jr.

President and Chief Financial Officer

Thomas A. McCreery, Waveform's president and chief financial officer, is a certified public accountant with a master's degree in business administration from the University of Chicago.

Most recently, Mr. McCreery served as a senior accountant at Deloitte, Haskins and Sells, where he provided audit consulting and tax services to businesses with high growth potential, such as computer software and electronics industries.

Before that, he served as a staff analyst for the State of California Department of Finance, where he played an instrumental role in saving taxpayers an estimated $1 million per year.

Mr. McCreery also served as project director for National Science Foundation Studies and as liason to the California State Legislature, Department of Consumer Affairs and various lobbies.

Mr. William Moulton

Chairman of the Board,

Vice-President and Technical Director

William Moulton is responsible for technical development of Waveform's products.

Prior to Waveform, Mr. Moulton was a vice-president of Stereographics Corp., a San Rafael-based company involved in the development of three dimensional video systems for computer displays and broadcast media. His responsibilities included strategic planning and software specification.

Before that, Mr. Moulton co-founded Ultimate Media, a research and development think tank involved with microcomputer technology as it relates to the arts.

Mr. Moulton is a life-long amateur musician who plays several instruments. He co-founded Waveform to make music easier to play.

His other interests include the application of systems analysis, cybernetics and information theory to the arts.

Mr. Moulton attended the University of California at Davis and Santa Cruz.

Mr. Thomas Casner

National Sales Manager

Thomas Casner, Waveform's national sales manager, has extensive experience in selling computer products to consumers, retailers and distributors.

Most recently, he worked as national accounts manager for SKU Inc., where he worked closely with founder Don Kingsborough and played a key role in making that firm a leading software distributor. Mr. Casner helped build SKU's rep organization and increase its national accounts from zero to $1 million per month in sales.

Mr. Casner has worked with major accounts such as Musicland, B. Dalton, Venture, Video Concepts and Service Merchandisers.

Before that, he worked with all major accounts in Atari's Computer Division in the western United States, including Macy's, Pacific Stereo, Computerland Corporate and Video Concepts. He helped introduce the Atari Computer into mass merchant accounts.

Mr. Steve Wolff

Director of Engineering

Steve Wolff, Waveform Corp.'s director of engineering, is responsible for all design and production.

Mr. Wolff has worked as a consultant to many Fortune 500 companies worldwide. He has developed many technologies in diverse fields and has many practical as well as theoretical developments to his name.

He is experienced in the fields of acoustics, music and structural modal analysis.

Mr. Wolff has operated his own consulting firm and manufacturing business.

He is a graduate of the University of California at Berkeley with a master's degree in mechanical engineering.

Mr. Mick Fitzgerald

Senior Product Manager

Mick Fitzgerald, Waveform Corp.'s senior product manager, is responsible for tracking, scheduling and maintaining Waveform product inventories, including scheduling of new products. He is also responsible for product documentation.

Most recently, Mr. Fitzgerald taught students in the Mt. Diablo, Calif. School District how to use and write software programs.

Before that, Mr. Fitzgerald marketed mainframes, minicomputers and terminals for NCR Corp. At NCR, his responsibilities ranged from direct sales to the development and implementation of marketing strategies.

He is an accomplished amateur musician, having played lead guitar for a number or bands during the past 15 years.

Mr. Fitzgerald is a graduate of San Francisco State University, with graduate work in secondary education.

MusiCalc 1, from Waveform Corp., turns a Commodore 64 home computer into a sophisticated musical instrument that can be enjoyed by the professional, amateur or novice musician from the first day.

THE MUSICALC PRODUCT FAMILY

The MusiCalc family, from Waveform Corp. of Berkeley, consists of interactive software products which allow novices as well as professional musicians to create, play and perform music on the Commodore 64 home computer.

MusiCalc 1 Synthesizer & Sequencer transforms the Commodore 64 into a three-voice synthesizer with fully-interactive, real-time sequencing, slider controls and transposers.

MusiCalc 2 ScoreWriter shows users how their MusiCalc 1 creations appear in standard musical notation. Users can obtain printouts with the addition of recommended printers.

MusiCalc 3 Keyboard Maker lets users arrange the Commodore 64 into scales of the user's own design. It includes a set of 72 pre-programmed scales from around the world.